Efficient web browsing on handheld devices using page and form summarization

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ABSTRACT

We present a design and implementation for displaying and manipulating HTML pages on small handheld devices such as personal digital assistants (PDAs), or cellular phones. We introduce methods for summarizing parts of Web pages and HTML forms. Each Web page is broken into text units that can each be hidden, partially displayed, made fully visible, or summarized. A variety of methods are introduced that summarize the text units. In addition, HTML forms are also summarized by displaying just the text labels that prompt the use for input. We tested the relative performance of the summarization methods by asking human subjects to accomplish single-page information search tasks. We found that the combination of keywords and single-sentence summaries provides significant improvements in access times and number of required pen actions, as compared to other schemes. Our experiments also show that our algorithms can identify the appropriate labels for forms in 95% of the cases, allowing effective form support for small screens.

REFERENCES

Note: OCR errors may be found in this Reference List extracted from the full text article. ACM has opted to expose the complete List rather than only correct and linked references.

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2 Timothy W. Bickmore , Bill N. Schilit, Digestor: device-independent access to the World Wide Web, Selected papers from the sixth international conference on World Wide Web, p.1075-1082, September 1997, Santa Clara, California, United States

3 Orkut Buyukkokten , Hector Garcia-Molina , Andreas Paepcke , Terry Winograd, Power browser: efficient Web browsing for PDAs, Proceedings of the SIGCHI conference on Human factors in computing systems, p.430-437, April 01-06, 2000, The Hague, The Netherlands

A graphical user interface toolkit approach to thin-client computing

Full text Pdf (1.56 MB)

Source **International World Wide Web Conference** archive
Proceedings of the 11th international conference on World Wide Web table of contents
Honolulu, Hawaii, USA
SESSION: UI and Applications table of contents
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Publisher ACM Press New York, NY, USA

ABSTRACT

Network and server-centric computing paradigms are quickly returning to being the dominant methods by which we use computers. Web applications are so prevalent that the role of a PC today has been largely reduced to a terminal for running a client or viewer such as a Web browser. Implementers of network-centric applications typically rely on the limited capabilities of HTML, employing proprietary "plug ins" or transmitting the binary image of an entire application that will be executed on the client. Alternatively, implementers can develop without regard for remote use, requiring users who wish to run such applications on a remote server to rely on a system that creates a virtual frame buffer on the server, and transmits a copy of its raster image to the local client.We review some of the problems that these current approaches pose, and show how they can be solved by developing a distributed user interface toolkit. A distributed user interface toolkit applies techniques to the high level components of a toolkit that are similar to those used at a low level in the X Window System. As an example of this approach, we present RemoteJFC, a working distributed user interface toolkit that makes it possible to develop thin-client applications using a distributed version of the Java Foundation Classes.

REFERENCES

Note: OCR errors may be found in this Reference List extracted from the full text article. ACM has opted to expose the complete List rather than only correct and linked references.

1 An ASP you can grasp: The ABCs of active server pages.

Terms used
mobile near/4 device and **object near/4 event paragraph application** and **graphical near/4 element**

Found **77,467** of **166,357**

Sort results by: relevance

Display results: expanded form

Save results to a Binder

Search Tips

Open results in a new window

Try an Advanced Search

Try this search in The ACM Guide

Results 1 - 20 of 200 Result page: **1** 2 3 4 5 6 7 8 9 10 next

Best 200 shown

Relevance scale

1 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

Publisher: IBM Press

Full text available: pdf(4.21 MB) Additional Information: full citation, abstract, references, index terms

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

2 Pen computing: a technology overview and a vision

André Meyer

July 1995 **ACM SIGCHI Bulletin**, Volume 27 Issue 3

Publisher: ACM Press

Full text available: pdf(5.14 MB) Additional Information: full citation, abstract, citings, index terms

This work gives an overview of a new technology that is attracting growing interest in public as well as in the computer industry itself. The visible difference from other technologies is in the use of a pen or pencil as the primary means of interaction between a user and a machine, picking up the familiar pen and paper interface metaphor. From this follows a set of consequences that will be analyzed and put into context with other emerging technologies and visions.Starting with a short historic ...

3 Special issue: AI in engineering

D. Sriram, R. Joobbani

April 1985 **ACM SIGART Bulletin**, Issue 92

Publisher: ACM Press

Full text available: pdf(8.79 MB) Additional Information: full citation, abstract

The papers in this special issue were compiled from responses to the announcement in the July 1984 issue of the SIGART newsletter and notices posted over the ARPAnet. The interest being shown in this area is reflected in the sixty papers received from over six countries. About half the papers were received over the computer network.

4 Flexible collaboration transparency: supporting worker independence in replicated

application-sharing systems
James Begole, Mary Beth Rosson, Clifford A. Shaffer
June 1999 **ACM Transactions on Computer-Human Interaction (TOCHI)**, Volume 6 Issue 2
Publisher: ACM Press

Full text available: pdf(312.22 KB) Additional Information: full citation, abstract, references, citings, index terms, review

This article presents a critique of conventional collaboration transparency systems, also called "application-sharing" systems, which provide the real-time shared use of legacy single-user applications. We find that conventional collaboration transparency systems are inefficient in their use of network resources and lack support for key groupware principles: concurrent work, relaxed WYSIWIS, and group awareness. Next, we present an alternative approach to implementing collaborat ...

Keywords: Flexible JAMM, Java, application sharing, collaboration transparency, computer-supported cooperative work, groupware, usability

5 Wireless game and game story: Contextual information access and storytelling in mixed reality using hypermedia
Luis Romero, JORGE SANTIAGO, NUNO CORREIA
July 2004 **Computers in Entertainment (CIE)**, Volume 2 Issue 3
Publisher: ACM Press
Full text available: pdf(480.08 KB) Additional Information: full citation, abstract, references, index terms

This article describes gaming and storytelling activities in a mixed environment that integrates the real and virtual worlds, uses an augmented reality paradigm, and is supported by a structuring and presentation framework for use in context-aware mixed-reality applications. The basis of the framework is a generic hypermedia model that can handle different media elements, objects, and relations between spaces and locations in physical and virtual worlds. A main component of the model deals wi ...

Keywords: hypermedia interfaces, hypermedia model, mixed and augmented reality, mobile gaming and storytelling

6 Architectures: A perspective on the future of massively parallel computing: fine-grain vs. coarse-grain parallel models comparison & contrast
Predrag T. Tosic
April 2004 **Proceedings of the 1st conference on Computing frontiers**
Publisher: ACM Press

Full text available: pdf(277.49 KB) Additional Information: full citation, abstract, references, index terms, review

Models, architectures and languages for *parallel computation* have been of utmost research interest in computer science and engineering for several decades. A great variety of parallel computation models has been proposed and studied, and different parallel and distributed architectures designed as some possible ways of harnessing parallelism and improving performance of the general purpose computers.*Massively parallel connectionist models* such as *artificial neural networks* (...

Keywords: cellular automata, distributed systems, massively parallel computing, multiprocessor computers, neural networks, parallel computation models

7 UI and Applications: A graphical user interface toolkit approach to thin-client computing
Simon Lok, Steven K. Feiner, William M. Chiong, Yoav J. Hirsch
May 2002 **Proceedings of the 11th international conference on World Wide Web**
Publisher: ACM Press

Full text available: pdf(1.56 MB) Additional Information: full citation, abstract, references, index terms

Network and server-centric computing paradigms are quickly returning to being the dominant methods by which we use computers. Web applications are so prevalent that the role of a PC today has been largely reduced to a terminal for running a client or viewer such as a Web browser. Implementers of network-centric applications typically rely on the limited capabilities of HTML, employing proprietary "plug ins" or transmitting the binary image of an entire application that will be executed on the cl ...

Keywords: client-server systems, network computing, remote method invocation, user interface toolkit

8 Mixed reality hypermedia: HyperReal: a hypermedia model for mixed reality

Luis Romero, Nuno Correia

August 2003 **Proceedings of the fourteenth ACM conference on Hypertext and hypermedia**

Publisher: ACM Press

Full text available: pdf(321.04 KB) Additional Information: full citation, abstract, references, citings, index terms, review

This paper describes a generic hypermedia model that is used as a framework for building context aware and mixed reality applications. It can handle different media elements, and it defines a presentation scheme that abstracts several relevant navigation concepts, including link awareness. The model specifies a base structure for the relation between spaces, either real or virtual, and supports contextual mechanisms. Additionally, it establishes a way to correlate real/virtual world objects with ...

Keywords: history, hypermedia interfaces, hypermedia model, mixed and augmented reality, mobile gaming and storytelling

9 External memory algorithms and data structures: dealing with **massive data**

Jeffrey Scott Vitter

June 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 2

Publisher: ACM Press

Full text available: pdf(828.46 KB) Additional Information: full citation, abstract, references, citings, index terms

Data sets in large applications are often too massive to fit completely inside the computers internal memory. The resulting input/output communication (or I/O) between fast internal memory and slower external memory (such as disks) can be a major performance bottleneck. In this article we survey the state of the art in the design and analysis of external memory (or EM) algorithms and data structures, where the goal is to exploit locality in order to reduce the I/O costs. We consider a varie ...

Keywords: B-tree, I/O, batched, block, disk, dynamic, extendible hashing, external memory, hierarchical memory, multidimensional access methods, multilevel memory, online, out-of-core, secondary storage, sorting

10 Charting past, present, and future research in ubiquitous computing

Gregory D. Abowd, Elizabeth D. Mynatt

March 2000 **ACM Transactions on Computer-Human Interaction (TOCHI)**, Volume 7 Issue 1

Publisher: ACM Press

Full text available: pdf(730.83 KB) Additional Information: full citation, abstract, references, citings, index terms

The proliferation of computing into the physical world promises more than the ubiquitous availability of computing infrastructure; it suggest new paradigms of interaction inspired by constant access to information and computational capabilities. For the past decade,

application-driven research on abiquitous computing (ubicomp) has pushed three interaction themes:natural interfaces, context-aware applications,andautomated capture and access. To chart a cours ...

Keywords: augmented reality, capture and access, context-aware applications, evaluation, everyday computing, natural interfaces, social implications, ubiquitous computing, user interfaces

11 Web content accessibility guidelines 1.0

Wendy Chisholm, Gregg Vanderheiden, Ian Jacobs
July 2001 **interactions**, Volume 8 Issue 4
Publisher: ACM Press
Full text available: pdf(471.98 KB) Additional Information: full citation, references, citings, index terms

12 Reviewed articles: SIGAda 2001 workshop, "creating a symbiotic relationship between XML and Ada"

Robert C. Leif
September 2002 **ACM SIGAda Ada Letters**, Volume XXII Issue 3
Publisher: ACM Press
Full text available: pdf(1.39 MB) Additional Information: full citation, abstract, references, citings, index terms

The purpose of the workshop was to organize the Ada community to take advantage of the opportunity to create Ada applications that are operating systems independent because they are based on a web technology, XML, Extensible Markup Language. The commercial use of the Internet is the driving force behind XML. Four elements of XML, which together are sufficient to build a web application, and all employ the same syntax were described. These are XML; its schema; the Extensible Stylesheet Language, ...

13 Posters: A generic uiml vocabulary for device- and modality independent user interfaces

Rainer Simon, Michael Jank Kapsch, Florian Wegscheider
May 2004 **Proceedings of the 13th international World Wide Web conference on Alternate track papers & posters**
Publisher: ACM Press
Full text available: pdf(326.84 KB) Additional Information: full citation, abstract, references, index terms

We present in this poster our work on a User Interface Markup Language (UIML) vocabulary for the specification of device- and modality independent user interfaces. The work presented here is part of an application-oriented project. One of the results of the project is a prototype implementation of a generic platform for device independent multimodal mobile applications. The poster presents the requirements for a generic user interface description format and explains our approach on an integrated ...

Keywords: UIML, device-independence, generic user interface description, mobile devices, mobile networks, multimodal user interfaces, multimodality, voice interfaces

14 Middleware design issues for ubiquitous computing

Tatsuo Nakajima, Kaori Fujinami, Eiji Tokunaga, Hiroo Ishikawa
October 2004 **Proceedings of the 3rd international conference on Mobile and ubiquitous multimedia MUM '04**
Publisher: ACM Press
Full text available: pdf(183.67 KB) Additional Information: full citation, abstract, references

Our daily lives will be dramatically changed by embedded small computers in our environments. The environments are called *ubiquitous computing environments.* To

realize the environments, it is important to reduce the cost to develop ubiquitous computing applications by encapsulating complex issues in middleware infrastructures that are shared by various applications.In this paper, we describe three middleware infrastructures for supporting ubiquitous computing, that have developed in our p ...

Keywords: middleware design, ubiquitous computing

15 Developing and integrating enterprise components and services: Enterprise application integration and complex adaptive systems
Jeff Sutherland, Willem-Jan van den Heuvel
October 2002 **Communications of the ACM**, Volume 45 Issue 10
Publisher: ACM Press
Full text available: pdf(127.83 KB) html(47.72 KB) Additional Information: full citation, abstract, references, citings, index terms

Could system integration and cooperation be improved with agentified enterprise components?

16 Interacting with big interfaces on small screens: a comparison of fisheye, zoom, and panning techniques
Carl Gutwin, Chris Fedak
May 2004 **Proceedings of the 2004 conference on Graphics interface GI '04**
Publisher: Canadian Human-Computer Communications Society
Full text available: pdf(344.22 KB) Additional Information: full citation, abstract, references, citings

Mobile devices with small screens are becoming more common, and will soon be powerful enough to run desktop software. However, the large interfaces of desktop applications do not fit on the small screens. Although there are ways to redesign a UI to fit a smaller area, there are many cases where the only solution is to navigate the large UI with the small screen. The best way to do this, however, is not known. We compared three techniques for using large interfaces on small screens: a panning sys ...

Keywords: fisheye views, large interfaces, mobile devices, screen space, small screens, zoom and pan

17 Applications on the go: A systems architecture for ubiquitous video
Neil J. McCurdy, William G. Griswold
June 2005 **Proceedings of the 3rd international conference on Mobile systems, applications, and services MobiSys '05**
Publisher: ACM Press
Full text available: pdf(334.54 KB) Additional Information: full citation, abstract, references

Realityflythrough is a telepresence/tele-reality system that works in the dynamic, uncalibrated environments typically associated with ubiquitous computing. By harnessing networked mobile video cameras, it allows a user to remotely and immersively explore a physical space. RealityFlythrough creates the illusion of complete live camera coverage in a physical environment. This paper describes the architecture of RealityFlythrough, and evaluates it along three dimensions: (1) its support of the abs ...

18 Small devices 2: Summary thumbnails: readable overviews for small screen web browsers
Heidi Lam, Patrick Baudisch
April 2005 **Proceedings of the SIGCHI conference on Human factors in computing systems**
Publisher: ACM Press
Full text available: pdf(2.18 MB) Additional Information: full citation, abstract, references, index terms

In order to display web pages designed for desktop-sized monitors, some small-screen

web browsers provide single-column or thumbnail views. Both have limitations. Single-column views affect page layouts and require users to scroll significantly more. Thumbnail views tend to reduce contained text beyond readability, so differentiating visually similar areas requires users to zoom. In this paper, we present *Summary Thumbnails*-thumbnail views enhanced with readable text fragments. Summary Th ...

Keywords: PDA, overview, semantic zoomingblutwurst, small screen device, thumbnail view, web browsing

19 Software for simulation

Jerry Banks
December 1993 **Proceedings of the 25th conference on Winter simulation**
Publisher: ACM Press
Full text available: pdf(1.03 MB) Additional Information: full citation, references, citings

20 Document analysis: Visual signature based identification of Low-resolution document images

Ardhendu Behera, Denis Lalanne, Rolf Ingold
October 2004 **Proceedings of the 2004 ACM symposium on Document engineering**
Publisher: ACM Press
Full text available: pdf(2.00 MB) Additional Information: full citation, abstract, references, index terms

In this paper, we present (a) a method for identifying documents captured from low-resolution devices such as web-cams, digital cameras or mobile phones and (b) a technique for extracting their textual content without performing OCR. The first method associates a hierarchically structured visual signature to the low-resolution document image and further matches it with the visual signatures of the original high-resolution document images, stored in PDF form in a repository. The matching algor ...

Keywords: document visual signature, document-based meeting retrieval, documents' content extraction, low-resolution document image identification